

CHAMBERS'S JOURNAL

OF

POPULAR

LITERATURE, SCIENCE, AND ART.

Fourth Series

CONDUCTED BY WILLIAM AND ROBERT CHAMBERS.

No. 670.

SATURDAY, OCTOBER 28, 1876.

PRICE 1½d.

'STORM WARRIORS.'

OUR rock-bound coasts and the narrow seas that wash our shores are, and always have been, proverbially fatal to the sailor. From whatever direction our islands are approached, dangers more real than the fabled Scylla and Charybdis of old yawn before the hardy mariner. On the east coast of Kent stretch the treacherous Goodwin Sands; while the Irish Channel, the cliffs of the Isle of Wight, the iron-bound shores of Wales, and the bleak coasts of Scotland, have all in turn brought death instead of welcome to many a stately ship, which has ridden out in safety the tropic hurricane, and weathered full many a mid-ocean gale, only to rush upon sudden destruction at the very threshold of home.

Many disastrous shipwrecks have occurred within a few yards of the shore; but these few yards have been such a chasm of boiling seething surf that no ordinary boat could be launched upon it and live; and the greedy breakers have engulfed their prey, with the familiar headlands, the green fields, and the pleasant homesteads of the dear old country mocking the longing gaze of those who have returned to her only to die.

To snatch if possible some victims from the angry sea, and so abate the agony of these terrible scenes of disaster and death, was originated the life-boat movement, the history of which Mr Gilmore has sketched for us with considerable ability and graphic power in his *Storm Warriors* (London: Macmillan).

The first idea of a boat which should be so constructed as to live and swim amid the stormy breakers, and in the tremendous seas which surge and boil in rough weather along our tempest-driven shores, did not, curiously enough, originate with a sailor, but with Lionel Lukin, a coach-builder of London, an obscure but none the less a true hero, who, in the seclusion of his workshop, conceived and wrought out the idea of a boat which should float upon the troubled waters of a stormy sea. In 1785 he took out a patent for his life-boat, and like most inventors, had many

difficulties to encounter and many disappointments to endure, with little to console him except a brave heart and a good conscience, and the blessedness of knowing that by means of his life-boats a few lives had been gleaned from the terrible harvest of wrecks which annually bestrew our shores.

In 1789, a short time after his death, a shipwreck occurred, which did more than all his clamorous appeals to help on the life-boat movement in which he was so deeply interested. During a violent storm at Newcastle in the September of that year, a ship called the *Adventurer* missed the entrance to the harbour, and was driven right upon a ridge of rocks outside the pier. The pier was crowded with people of every rank, and many of them, even the hardy fishermen, shed tears in the anguish of their unavailing sympathy; but they could do nothing else, and there they stood during the long hours of that fearful afternoon, watching, on the faces of the doomed men opposite to them, the ruddy hues of health blanching into the ashy whiteness of death, and listening to their agonising cries as one by one they dropped despairing into the black abyss of waters. When night closed in, all were gone; and the spectators of the pitiful tragedy went home, not to sentimentalise over what they had seen, but to endeavour as far as they could to make such an occurrence impossible in the future. A Life-boat Committee was formed, and a prize was offered for the best life-boat. The successful competitor for this prize was Henry Greathead, a boat-builder of South Shields; and his boat, with some slight variations, remained until about 1851 the favourite model for life-boats. In 1851 the Duke of Northumberland, who was President of the National Life-boat Society, offered a prize of one hundred guineas for the best model of a life-boat. This prize was gained by James Beeching of Great Yarmouth; and his boat, after it had been still further improved by the assistant master-shipwright at the royal dockyard at Woolwich, was adopted, by the Royal National Life-boat Institution, as the model for boats of this description.

Beeching's prize-boat, which he named the

Northumberland, had meanwhile been purchased for the use of the harbour at Ramsgate, and was sent to cruise on the Goodwin Sands.

These dreaded sands, which stretch about ten miles along the east coast of Kent, owe their origin, according to an ancient tradition, to the cupidity and folly of the Abbot of St Augustine's in Canterbury, who obtained possession of them when they were taken from Earl Godwin about the year 1050. At that period they were fertile low-lying lands, protected from the sea by a wall which, like all sea-walls, required to be kept in thorough repair. The abbot was neglectful of this important point; perhaps he did not understand until too late the extreme insecurity of his new possessions; at all events he applied the funds which should have gone to the maintenance of the sea-wall, to the erection of Tenterden Steeple: it was built, and Earl Godwin's lands were lost for ever. While he was still busy about his architectural projects, the sea rushed in through a gap in the dilapidated wall, and has run riot there ever since, after a very imperious and masterful fashion.

As they partake of the nature of quicksands, it is very difficult to lay down any correct chart of the treacherous shoals and banks into which they are driven by every winter's gales, and it is almost impossible for a vessel once stranded upon any portion of them to get free. The rush of the sea is so great even in calm weather, that the wreck, instead of being floated off, works deeper with every tide into the soft oozy mass of treacherous sand, which in an incredibly short time swallows up every vestige of it. As may be expected, our wreck-chart has a fatally sad story to tell of these sands. In a frightful storm which occurred in November 1703, they engulfed a whole navy. Three line-of-battle ships of seventy guns each, with ten smaller men-of-war, were driven from their moorings and swallowed up with their crews in this abyss of sand and breakers.

It is on this dreary scene, amid a howling waste of waters whose desolation it is difficult for a landsman to conceive, that Mr Gilmore's Storm Warriors, the noble life-boat men, dare and do deeds whose high emprise exceeds a thousandfold that of the much-vaunted knights-errant of old.

Let us imagine ourselves at midnight on the storm-tossed Goodwin; the tempest is rushing in tones of thunder along the dark bosom of the heaving sea; from time to time the fitful flash of a rocket makes the darkness more visible, and slowly feeling her way along the edge of the sands, searching for the whereabouts of the endangered ship, toils the life-boat and her crew. The struggle of wind and sea, the strife of waters, are so appalling, that it is difficult to conceive how human courage can rise to the strain; but not one heart sinks, not one strong frame quivers with even a passing thrill of fear, although here there is none of the sympathy that sustains, no admiring crowds to note the heroism that must do or die. Having once got the clue, the life-boat makes straight as an arrow to the point of the shoal where a large emigrant ship has run aground. 'How many can you carry?' the captain and pilot shout as they approach, 'for we have more than a hundred souls on board, the half of them women and children.'

'All right,' is the cheery response. 'We have a steamer behind us, and will take you off in

detachments.' With that the poor, exhausted, terror-worn passengers raise a faint cheer, and there is a sudden revulsion from despair to hope; and some who have nerved themselves to face death firmly, give way altogether at the prospect of renewed life, and shriek aloud in their strange gladness, which is almost pain; and one warm-hearted Irishwoman rushing forward, seizes the hand of the cockswain of the life-boat and wrings it, as she sobs out: 'I'll pray the Holy Father for you—I will, honey, the longest day of my life.'

Amid such fierce waves as often sweep in wild succession over the Goodwin Sands, even a life-boat is sometimes in circumstances of considerable danger. When driving in before the gale on the foaming rollers, much attention is necessary to prevent the boat broaching to, for if she did, she would in all probability be rolled over with the curl of the advancing wave, and her crew and passengers washed out of her. Again, in violent storms, although the boat may be comparatively safe while floating with the waves, there is often great danger in breasting them. One moment she is on the crest of a tremendous roller; the next she sinks into the trough of the sea, enveloped in a blinding shower of spray, and requiring the utmost vigilance and skill on the part of her crew to prevent her from turning bottom upwards. Then, when close to a wreck, many special dangers are to be met and guarded against: the boat may be carried by the force of the waves right over the wreck, or dashed against it, or get entangled in the wreckage, a contingency not unlikely to arise, particularly at night.

'Were you not frightened in the dreadful storm last night?' was the question asked of one of the Ramsgate life-boat men.

'No,' said the boatman; 'I was not. I had my inward feelings, as a man naturally must have when he is face to face with danger. I saw well enough that there was hard work before me; but by God's help, I determined to do it.'

In this spirit these men often perform deeds of individual heroism, which have been equalled but never surpassed in the annals of self-sacrifice.

One stormy evening a Dutch ship, fearfully crippled by the gale, was driven ashore on the Goodwin, where she soon became a total wreck. A very heavy sea was washing over her, and as the life-boat came up, the planks of the deck began to break and float away. The second-mate, one of the few survivors of the crew, never doubting that the last moment had come, threw himself into the sea in a paroxysm of terror, and seizing the rope by which the life-boat had just been made fast to the wreck, he tried to work himself along it; but he was weak, dispirited, and half frozen, and the breakers, as if in cruel sport, tossed and swayed him about, as they rushed over him in their mad career. Exhausted, breathless, half-dead, he was just about to drop the rope, when he was grasped by one of the life-boat men; and a long and exciting struggle began with the angry sea, which, like a ferocious wild beast, seemed loath to relinquish its prey. The fierce gale howled around them with a noise like thunder; wave after wave washed over them, each one leaping higher than its predecessor had done; and still the two men, the living and the half-dead, clung to each other with the convulsive clutch of despair. It seemed impossible to save either; and in the dark squally winter

morning a cry of horror suddenly rose from the crew of the life-boat; a new danger threatened them: between them and the storm-swept sky there suddenly hove in sight a gigantic black mass, a pile of broken timber from the wreck, which, borne along on the swift tide, was rushing full upon them. 'Sheer the boat!' they shouted simultaneously; 'port the helm!' and suiting the action to the word, she did give way a little, scarcely a hand-breadth; but it saved her; the pile of wreckage went crashing past. And these two men, where were they? Alive still! and after a few minutes more of painful suspense, both were saved.

Not infrequently the privations and hardships which they endure in the life-boat affect these strong brave men very painfully. Mr Gilmore gives us the experience of one cockswain of the *Northumberland* prize life-boat, James Hogben, a daring and hardy sailor who, prior to being appointed to the *Northumberland*, had spent the greater part of his life in cruising about the Goodwin Sands. This man was out in a fearful storm on New Year's eve some years ago, when a large ship, the *Gottenburgh*, was lost, and her crew washed from the wreck and drowned before the very eyes of the life-boat men, who, owing to some mistake, arrived upon the scene of the disaster too late to be of any use. This disappointment and the fierce inclemency of the weather were too much for Hogben: he fell seriously ill; and his nerves became so shattered, and his once brave spirit so sunk and broken, that from being as bold as a lion he became so timid that he dared not walk down Ramsgate pier lest he should tumble off into the sea.

Sometimes a life-boat will make a great many attempts to reach a wreck, and will be as often beaten back, and yet succeed in the end; so that persistency and the power of endurance are as necessary to these Storm Warriors as courage. One stormy January evening not many years ago, about half-past ten at night, the boom of a signal-gun was heard on the pier at Ramsgate, and this signal of distress was immediately succeeded by a series of rockets thrown up from the *Gull* light-ship. With all possible haste the life-boat was manned, and was towed out by a steamer in the direction of the light-ship. A careful look-out was of course kept; but the snow-showers were so blinding and incessant, that little could be seen except the broken crests of the rushing waves as they raced past them, to break in clouds of foam and spray upon the sands. The sea was very heavy, and the water from time to time came dashing over them in icy cold floods, chilling them to the very marrow of their bones. For some time they kept cruising about, but they were unable to see a yard ahead of them, and at last even their endurance gave way, and they returned to Ramsgate, which they reached about five in the morning. So great, however, was their anxiety about the wreck that they could not rest, and as soon as it was daylight they were again towed out by the steamer *Aid* in the direction of the North Sands Head light-ship. The morning was gloomy in the extreme, with a moaning wind, which gradually freshened into a gale; and at last, amid the sleet and foam, they saw in the distance a large ship aground on the south-east point of the sands. As they approached, the wind, which had been more than sufficiently high before, suddenly

swelled into a tempest, and the very spirit of the hurricane seemed about to descend on their devoted heads; a snow-squall came sweeping by, and the waves, foaming along, dashed over the boat great floods of surf and spray, till she quivered and staggered with the weight of water. It was up to the men's necks; but staunch, indomitable as bloodhounds, they clung convulsively to her for a breathless moment; the next she had cleared herself of water, and mounting elastic on a huge wave, was carried within sixty yards of the wreck, which, battered and broken, and with the crew crouching under the deck-house, presented a pitiable appearance. Full of eager excitement and hope, the life-boat men cheered loudly as they let go their anchor. 'Hold on! hold on!' shouted the cockswain in a warning voice; and a wave more tremendous than any they had yet encountered rushed forward, a huge mass of glistening green water; curling over, it broke, fell, overwhelmed, and for the moment almost stunned them. The boat plunged and tossed like some wild creature instinct with tortured life. They scarcely knew if she was still afloat, or was fast sinking; but she was their sole hope, and they clung to her with the resolute energy of despair. The next moment she righted herself, shook the water from her ruffled plumage, and buoyant as a swallow, skimmed elastic through these grim jaws of death. She was safe; but she had missed her mark; the force of the wave had carried her far past the wreck; and the crew, as they prepared for another attempt, again cheered the poor half-drowned wretches, who but a moment before accounted their last hope gone.

Hoisting the sail, they tried to run the boat right forward upon the wreck; but she reared and plunged like a fractious horse, and was tossed now in one direction now in another, until, utterly baffled and beaten, they retreated to the steamer, and were by her again towed into position. A third and fourth time they made the trial with the same result; and as they prepared for a fifth attempt, they glanced anxiously at the rigging of the wreck, where the crew had taken shelter, for it was manifest to their experienced eyes that she was breaking up fast. With almost feverish impatience the boat was got ready for what every one felt must be a last effort. Very little was said by the crew; it was a time not for words, but deeds. 'We were thoroughly warm at our work,' said one of the men afterwards; 'we felt like lions; nothing could stop us.' And with a lion-like courage they headed the boat again for the wreck, driving her sheer forward, till, with a sudden leap, she sprang upon the half-submerged vessel, and drifting over her, cast her anchor fast and firm on the deck!

Then by degrees, not without difficulty and with some hair-breadth escapes, the shipwrecked men were got on board; and the life-boat with her precious freight returned to Ramsgate, where she herself had been almost given up as lost.

Thus from year to year these Storm Warriors battle on with the howling winds and angry seas. In the dark tempestuous winter evenings, when we, who live at home at ease, draw our chairs nearer to the warm hearth, and feel our luxurious sense of comfort enhanced by the angry storm which is raging at our doors, these gallant men, scorning hardship and danger, brace themselves for deeds of heroism such as our old viking ancestors would

not have disdained. More enlightened than these ancient rovers of the sea, who, brave as they were, lived only to destroy, the mission of our Storm Warriors is to save, and that amid circumstances which call for the sympathy and support of all who can appreciate courage and perseverance, or feel how true and noble a thing is noble work simply and manfully done.

It only remains for us to add that those who may be wishful to aid in the good cause can do so by forwarding their subscription to the Royal National Life-boat Institution.*

Speed the life-boat!

INDISCRIMINATE ACQUAINTANCES.

IN TWO CHAPTERS.—CHAPTER II.

WHEN we came to explain matters, though the Peerage was a great help to us, still we could not but admit that, except from his own account, we knew very little; certainly not enough to satisfy our father, who expressed in no measured terms his disapproval of picked-up acquaintances.

'He may be very nice, and I daresay he is,' said my father; 'but I am not going to let you girls make friends that I don't know something of myself.'

'I think you are quite right, Edward,' put in mamma. 'It was through Mrs Devereux that we really got to know him, and I have not quite cared myself for the intimacy; though I must say Colonel Gore is a most agreeable man and quite a gentleman.'

'Perhaps so,' answered our father with ominous brevity.

I stole a glance at Nora during the conversation, and noticed that she grew very pale as it proceeded; paler still when shortly afterwards it was settled that we had had enough of sea-breezes, and were to return to King's Court on the following week.

Colonel Gore still lingered; but, to our surprise—mine at least—he ceased his marked attentions to our party from the time of our father's arrival. He was introduced to him, and failed to impress him as favourably as he had done the rest of the family; in fact, the latter made no secret of his aversion to him, to which we all listened with very mingled feelings.

'He can't look you in the face,' said my father; 'there's a shifty look about him.'

Florence indulged in a quiet sneer at this remark, unobserved as she imagined; but my mother caught sight of it, and said—very sharply for her: 'I don't know what you are laughing at, Florence.'

'Oh, at the idea,' responded Florence—'at the very idea of Uncle Edward's thinking Colonel Gore couldn't look him in the face—a man in his position. Why, he might marry a duke's daughter.'

'No one was talking of marrying,' interrupted my father.

'O no!' assented Florence; 'but I thought you didn't think him good enough to associate with. A baron's son, the colonel of a hussar regiment—such a thorough gentleman.'

'I don't care what he is,' replied my father; 'but I don't choose my daughters to make acquaintances indiscriminately.'

Then the subject dropped, and that night we passed Colonel Gore on the Spa—a distant inclination from my father being all the acknowledgment bestowed upon him. It was evident from the very first that our father regarded him with dislike and mistrust; we all felt that, and I wondered what Nora in particular thought about it; I could not forget the gala night, though she apparently had done so. I never questioned her again, partly because just then a slight shade seemed to have come between us. She and Florence were constantly closeted together; whilst Emmy and I were most palpably *de trop* if we ever attempted the faintest interruption of their conferences. However, the evening preceding our departure from Scarborough, Nora was nicer and kinder than she had been to me for some time. She was not usually very demonstrative, so it surprised me when, as we were dressing to go out, she suddenly threw her arms round my neck, and began to sob almost hysterically.

'What is it, Nora? Dear Nora, what is the matter?' I asked in great anxiety.

'Nothing—nothing,' she answered, calming herself with evident difficulty, and drying her streaming eyes: 'I'm only very silly—don't tell, Esmé; but promise me one thing, always to love me.'

'To love you, Nora!' I echoed, mystified at the request; 'I always loved you. Aren't you my own sister?'

'Yes, O yes; but you won't forget, Esmé. You'll always remember I am—your—own—sister.'

'Always,' I answered emphatically, snatching up my gloves and hurrying down-stairs to join the others, slowly followed by Nora.

It was a very sultry evening; it would have been oppressive, but for the cool delicious air off the tranquil sea. We all sat listening—a happy family party—to the monotone of the waves as they washed gently up in endless succession—long after the band had ceased playing, and the fashionable loungers had repaired to their respective hotels.

'How delightful it is!' said Emmy; 'I should like to stay out all night.'

'I'm sure I shouldn't,' responded Florence; 'I infinitely prefer a comfortable bed to sitting staring at the sea.'

Her unappreciative remark reminded my mother of the lateness of the hour, for she said immediately: 'It is late, but it is your last look, girls; we shall be at King's Court to-morrow.'

'Dear old King's Court!' cried Emmy; 'I'm never sorry to be there.'

'Nor am I,' I agreed.

But Nora never spoke.

We moved homewards slowly—Nora and Florence rather lingering behind, whilst mamma, Emmy, and I preceded them.

Our father had returned to King's Court before us, so these last few days at Scarborough we had been without him; but Colonel Gore had not apparently taken any advantage of his departure. He was offended, no doubt, at the reception he had met with at the first introduction. So it was probable that after all his intimacy with us, he would leave without saying good-by.

I have often wondered at the sort of intuitive presentiment I had that night of coming evil; I could not shake it off, try as I might. It was

* Richard Lewis, Secretary, Royal National Life-boat Institution, 14 John Street, Adelphi, London.

almost a relief to me when Emmy, who shared a bedroom with me, tried to account for the depression and restlessness that oppressed me, by attributing it to the thunder, which, from the extreme heat and stillness of the atmosphere, we felt certain could not be far off. At midnight it came—the low, rolling peals, preceded by vivid flashes illuminating our room in quick succession, that frightened us all, and caused the very house to shake. But ere the storm ended I fell asleep, and the sun was shining brightly when I awoke. Some one was standing by our bed, in whom it required no second glance to recognise our mother.

'Children,' she was saying, 'O children, wake up and find her.' I don't remember how she gasped out her dreadful discovery—but Nora was gone.

All was confusion, dismay, and horror. Florence only retained her calmness, and was just then a wonderful assistance and comfort—for we never guessed the part she had taken in the affair. She it was who telegraphed to my father—she, who reasoned mamma into almost tranquillity, by representing in most glowing terms, the very worst side, as she phrased it, of Nora's elopement.

Lord Raymond probably had very high views for his son, and Colonel Gore doubtless had made certain that Nora's parents would be averse to her entering a family where just at first she might not be quite welcome; but once married, the only son and heir must of necessity be forgiven; and if the future Lady Raymond had been slightly imprudent, why, her wealth and position precluded the possibility of unpleasant remarks being made. Her next letter would be from Portman Square—for poor Nora had written a few blotted lines to implore forgiveness, and to tell us that by the time we received it she would be Gerald's wife.

Never shall I forget my father's face when he arrived—he looked ten years older; his voice was harsh, changed, and terrible when he walked in—taking no notice of any of us, but addressing our mother, demanded to be told all and everything with regard to this overwhelming disgrace.

'Leave the room—all of you,' he said, waving his hand towards us, and we trooped out—Emmy and I weeping, while Florence retired to pack up her multitudinous dresses, preparatory to bidding us all good-by.

We left Scarborough that afternoon, and returned to King's Court with our mother, whilst our father hurried to London in quest of the fugitives—his errand not being made less anxious by having discovered that the Honourable Gerald had left a goodly bill behind him to which there was not much chance of a receipt stamp being affixed. Such conduct had aroused a terrible doubt in his mind, for it seemed incredible that, so notoriously wealthy as Lord Raymond was, he should have kept his son so short of funds; and as usual, when once the ball of inquiry was set rolling, as is always the case it gathered as it went. He had borrowed right and left—even Mrs Devereux bewailed a ten-pound note, which, however, was but a trifle in comparison to the other sums she had from time to time willingly 'lent' to this 'unmistakable gentleman' and scion of an ancient house.

We never heard where our father found them; in fact, when he returned, crushed and grieved-looking, none of us ventured to ask, and what passed between him and mamma was in the privacy of his study. We were only to be told

that Nora was married. She had disgraced her family, and we were sternly desired never to mention her name in his presence again. More than that, she was to cease to be regarded as our sister—we were to forget that we ever had a sister Nora.

What a change fell upon King's Court after that terrible sojourn at Scarborough! How we mourned for the absent one, and how Emmy and I used to sit for hours together whispering our wonderments—our woe at the sudden and total loss of our bright pretty sister.

'Papa will forgive her some day, Emmy,' I said, 'when she is Lady Raymond, and then she will come back to us dearer and sweeter than ever. How she must long to see us all again!'

'I was dreaming about her last-night,' answered Emmy; 'such a dreadful dream. I dreamt I saw her standing on a bridge, Esmé; it was only a narrow wooden one, and it was over a rapid rushing river; she was beckoning to me, and I tried to reach her, for I saw the bridge was bending; when suddenly it gave way, and the next thing I saw was Nora struggling, oh! so pitifully; but she was swept away,' concluded Emmy with a sob.

At last we heard the story why our father's grief and anguish had been so great, and why Nora's name had been forbidden to be uttered before him—for she had been deceived. Poor Nora. She had married not the Honourable Gerald Gore, but a needy adventurer, a base unscrupulous scoundrel who, under cover of another man's name, had foisted himself upon a credulous coterie, who had, strange as it now appears to us, accepted him upon his own representations and believed in him to the last.

To marry the eldest daughter of so rich a man as Mr Haughton of King's Court had suggested itself to him as an easy way of getting out of difficulties with which not even his astuteness could contend; and favoured by Florence's belief in his nobility, riches, and desirableness altogether, he had succeeded not only in winning Nora's heart, but in persuading her to take the fatal step of running away—urging upon both her and Florence the arguments advanced by the latter to us when the first discovery was made—namely, that his father had such exalted views for him, it would be utterly useless to ask his consent until the knot was tied which no man could unloose.

Nora had wavered—had faltered—half drawn back; then tremblingly promised; for the innocent unsophisticated girl was no match for the ruthless spider into whose web she had walked. She loved him, trusted him, and deserted her happy home for him.

Terrible had been the reckoning with my father that the impostor, Vincent Knowles, had to pay; and what Nora must have felt on the discovery of his falseness no one ever knew. She was his wife, whether as Gerald Gore or Vincent Knowles; and being his wife, ceased to be her father's daughter. Not that she should want, for an allowance far beyond what Mr Knowles had dared to hope for was to be regularly paid her; but there it ended, and for her sisters' sake she was to be an alien. And when first the fiat had gone forth, she heard it with something like calmness—having him, it was not such a death-blow.

We must hope he was kind to her at first, that at least a brief season of happiness followed. We

fancied she must be happy—reconciled to being estranged from us all—for she never wrote; not a line reached King's Court in the well-remembered characters. She was satisfied, and by degrees—for time is a wonderful healer—we became used to her absence.

So two years passed away. It was a stormy night in December; the elements seemed to be waging war with themselves in a struggle between snow and rain, and the wind was howling in dreary mournfulness through the leafless lime-trees. Nothing could have been more desolate than the prospect from the library window, where I had been standing looking out until the servant came to close the shutters, draw the curtains, and shut out the wretched scene. We had no cause to remember it, sitting down to a comfortable dinner with every appliance of luxury and refinement; yet we almost shuddered as those splashing torrents came dashing up against the windows. It was not a night for any human being to be out, and yet, toiling up the avenue, thinly clad, and with weak uncertain footsteps, there was a slight girlish figure. Drenched and trembling, she reached the porch; with all the little strength she had she rang the bell; a sharp short peal it was, which sounded clearly through the tempest. 'Who could it be at this time of night?' thought we, as Davis our old butler opened the door cautiously. He only saw that it was a woman, who neither pausing, nor parleying, slipped past him; on—on—nor stopped until she had gained the dining-room, thrown herself at my father's feet, and with a wild cry of 'Save me! O save me!' fainted in his arms.

Was that pale, inanimate, lifeless object Nora? Was that strangely clad, soaked, poverty-stricken being our once bright pretty pet?

Yes, it was Nora. Nora, who had a terrible tale to tell, which, but for a brain-fever that followed, would probably never have been revealed to us—of neglect, violence and cruelty, of coldness and indifference, followed by still worse. He had never cared for her, and she had written to us times without number; but knowing the result of his behaviour coming to my father's knowledge, he had taken care that none of her letters ever found their way to a post-office. He had tired of her, and tired of paying his hirelings to keep watch and ward; so when Nora, goaded to desperation, had threatened to return home, he took measures to place her where she had languished for twelve terrible months in a private lunatic asylum. Aided by the humanity of one of the nurses, Nora at last effected her escape, and succeeded in reaching her old home just when life itself seemed leaving her.

Vincent Knowles had been duly informed of her escape, and dreading the vengeance he well knew would overtake him, he embarked on board an outward-bound vessel, intending, no doubt, when the right time came, to return, and again torture his unhappy victim. But the day of reckoning had arrived. In sight of land, a few hours after leaving the shores of England, the vessel sank, and amidst the numbers that sank with her, to rise no more until the morning of the resurrection, was Vincent Knowles. Happy release for poor Nora, whom we nursed by day and night with all the tenderness that could be lavished; but all in vain. When the primroses and the snowdrops were blooming, Nora faded, and we laid her to rest with them blossoming above her.

Three things, we think, may be learned from her sad history; and to lay them to heart may save sorrow in families as happy as ours was when darkened by the shadow of a bad man. Firstly, that nothing can ever justify a parent in forsaking a child. Secondly, that a girl may always know, when tempted to deceive her parents, that the tempter is a villain. Thirdly, that never under any circumstances is it wise to admit into friendly intimacy indiscriminate acquaintances, no matter how agreeable; for though all may not be like Vincent Knowles, the wisdom of the rule cannot be doubted. Beware of Indiscriminate Acquaintances.

THE LORD MAYOR OF LONDON.

HIS PAGEANT AND BANQUET.

OF the pageants through the City of London other than that which takes place when the great dignitary enters formally on his year of office, we do not propose to treat.

In accordance with the early royal stipulation, the new Mayor must be presented for approval to the king or his chief judge; and as the successive sovereigns have held their court and the judges sat in Westminster, a journey thither had to be annually made from the City of London. These journeys were called *ridings*, as most of the personages went on horseback; and splendid affairs they usually were, quite eclipsing the 'show' with which we are now familiar. Sometimes a water procession was substituted for, or added to, a riding by land. The great City Companies hired barges for the occasion, and continued to do so until 1636, when the Grocers ordered 'a fair and large barge for the use of this Company' to be built, with 'a house and place for the safe keeping of said barge.' The other chief Companies were not slow in following the example; and thus was gradually formed a splendid array of state barges, headed by one of extra magnificence for the great man himself.

Hall's *Chronicle* tells us that, on one Lord Mayor's Day in the early Tudor times, the water procession on the Thames was led off by a barge containing 'a great dragon continually moving and casting wild-fire, and round about stood terrible monsters and wild men casting fire and making hideous noises.' Then came the Mayor's barge, garnished with many goodly banners and streamers, and richly covered; in which barge 'were shalmes, shagbushes (shawms and sackbuts?), and divers other instruments, which continually made goodly harmony.' Next came the gaily adorned barges of the Haberdashers, Mercers, Grocers, and other Companies, 'some garnished with silk, and some with arras and rich carpets.' The land-pageant often introduced practical punning allusions to the surname of the Mayor—such as Wells, Webb, and Lemon. A special example of this was displayed in the year when Alderman Wells was Mayor; three wells running with wine were exhibited at the Conduit in Cheapside, tended by three maidens representing Mercy, Grace, and Pity, who gave wine to all comers; the wells were surrounded by trees laden with oranges, almonds,

lemons, dates, &c., in allusion to the Mayor's trade as a grocer. (In the days when tea and coffee were unknown in England, the Grocers were merchants who dealt principally in foreign fruits and spices.) In 1566, Sir William Draper's show or pageant was such as would strike a modern Londoner with wonderment. The procession was headed by six boys, 'singing and pronouncing speeches'; forty-six bachelors in gowns trimmed with marten fur, and having crimson satin hoods; twenty-eight 'whiffiers,' to clear the way; forty-eight men bearing wax torches an ell in length; an equal number armed with javelins; and two fancifully dressed semi-savage 'woodmen,' carrying clubs and letting off squibs to clear the way—after which came the main personages of the procession, on richly caparisoned horses. Men 'apparelled like devils, and wilde men with squibs,' took part in one show in the time of Elizabeth. Standard-bearers, drummers, fifers, bedesmen, pikemen, trumpeters, waits, bachelors, whiffiers—all are named among the gay processionists in that century. (Bachelors and Whiffiers were two grades among the freemen of the several Companies.) The City giants were set up in Guildhall at least as far back as the Tudor times; for in 1558 we read of 'the two ymages of Gotmagog the Albione and Corineus the Britaine, two gyantes bigge in stature.' The old Gog and Magog were destroyed in the Great Fire of 1666; and a new pair carved by Richard Saunders a few years afterwards. On some occasions the grim monsters have been carried in the procession.

The citizens relished these shows too heartily to permit them to die out. At one time we hear of groups of children representing London, Magnanimity, Loyalty, the Soldier, the Sailor; at another, of four Nymphs, each of whom addressed the Mayor in a short speech; at another, of Astræa (supposed to represent Queen Elizabeth) attending with her flock at the Fountain of Truth, defying Superstition and Ignorance. There were, in one year or another, sea-chariots on the Thames, with Neptune to address His Worshipful on his way to Westminster; islands drawn on wheels through the streets, with trees bearing fruit; and Jason and Medea bearing the golden fleece in the ship *Argo*; the Chariot of Man's Life, with allegories of the successive periods of man's career; London and her twelve Daughters, representing the twelve Great Companies; the Mayor, Neptune, and Thamesis, attended by eight 'royal virtues'; a fishing-boat, with fishers drawing up their nets laden with real fish, and distributing them to the people; Mermen and Mermaids drawing an Angel of Victory; Bacchus rowed in a galloon by Bacchanals; Satyrs carousing in an Arbour of Delight; a King of the Moors attended by six tributary kings—in short, there was an amount of figurative, emblematical, symbolic imagery which our prosaic age can barely comprehend. The usual arrangement adopted was for each Company to provide the pageant on the mayoralty of one of its members, and to adopt allegorical tableaux associated with its trade. The Grocers were greatly distinguished in this matter; on one occasion they had an Island of Spices, with two mounted orientals distributing sugar, dates, nutmegs, and ginger to the populace.

Royal personages not unfrequently witnessed the civic displays. In six consecutive years Charles II. was provided with a cushioned and

curtained balcony in Cheapside, and afterwards dined with the Lord Mayor in Guildhall. Hogarth's picture of the Lord Mayor's Show, painted about the middle of the last century, depicts the Prince and Princess of Wales seated beneath a canopy at the end of Paternoster Row. The picture in other respects conveys an excellent idea of the show and its incidents—the genteel spectators accommodated on raised and inclosed seats; the general public in the roadway; the raised stands of the Companies along Cheapside; the windows and house-tops filled with gazers; the bedizened coach with its footmen; the livermen clustered in their several guilds; the City militia, the men in armour, and the flaunting flags and banners. The allegorical pageantry had pretty well worn itself out by the time of Queen Anne; but it was revived for a special occasion in 1761, when George III. and Queen Charlotte dined with the corporation on the first Lord Mayor's Day after the royal marriage and coronation. The Armourers, Braziers, Skinners, and Fishmongers came out in great force on this auspicious day with symbolical archers, men in armour, fur-dressed Indians, dolphins, mermaids, and sea-horses.

The Lord Mayor always rode on horseback in the procession until 1712, Sir Gilbert Heathcoat's year of mayoralty. The equestrianism has since been occasionally exhibited, but not on Lord Mayor's Day. Alderman Sir Claudius Hunter was rather proud of his horsemanship, and liked to ride about the City on a white steed. Hence arose an epigram:

An emperor of Rome, who was famous of whim,
A Consul his horse did declare;
The City of London, to imitate him,
Of a Hunter has made a Lord Mayor.

On Thanksgiving Day 1872, the Lord Mayor and nineteen other civic dignitaries appeared in equestrian array to receive the royal party at Temple Bar—not, it is said, without some indications of 'unstable equilibrium.'

The Lord Mayor's first official coach was a modest affair. The present enormous, heavy, gorgeous vehicle has done duty for nearly a hundred and twenty years, and is certainly the most unique object in the show; its panels were painted by Cipriani, and its total cost exceeded a thousand guineas. With very few exceptions indeed, the state coach on this eventful day has been honoured with the presence of the Lord Mayor decked with his insignia of office, his two chaplains, his sword-bearer, carrying the pearl sword presented to the City by Queen Elizabeth, and his mace-bearer, carrying the gold mace presented by Charles II.

Modern attempts to revive the old allegorical pageants have not had much success. In 1811, Alderman Sir Claudius Hunter as Lord Mayor borrowed two beautiful suits of armour, one brass and the other steel, for which Mr Elliston had paid five hundred pounds, and which were to be used in a grand spectacle at the Surrey Theatre; and John Kemble undertook to provide nodding plumes for the neighing steeds. The steeds were probably borrowed from the theatre, or were trumpeters' chargers from the Horse-guards. In 1822 there were three knights in armour, attended by three esquires in half-armour, heralds, and banner-bearers. The year 1825 presented the diversity of one knight

in copper armour, one in brass chain-mail, one in brass scale-armour, and two in steel and brass armour. In 1837, when Alderman Cowan was Lord Mayor, two colossal figures walked as Gog and Magog; they were fourteen feet high, and a man walked inside each. In 1841, Alderman Pirie's year of mayoralty, a ship fully rigged, and manned with boys from the Royal Naval School, formed a conspicuous object in the procession. In 1853, Alderman Sidney's year, Astley's Amphitheatre was appealed to for the furnishing of a Chariot of Justice, drawn by six horses; mounted standard-bearers of all nations; gold-diggers figuratively engaged in washing quartz (the Australian gold-fever had just set in); implements of industry in emblematical array; and a car with a throne, a terrestrial globe, and two fair women (from Astley's) personating Peace and Prosperity. In 1865, Alderman Phillips's year, armour was used in the procession; and a singular mixture of the modern with the mediæval was presented in one item of the day's expenses: 'Messrs Pickford, for cartage of armour, forty pounds.' Six men in glittering armour, with lances and pennons, figured in last year's pageant; but somehow the modern uniforms of a dozen or so of military bands, and other modern elements in the procession, clashed with this bit of chivalric revivalism. It may even be surmised that those young wags the boys of London irreverently quizzed the gallant knights, and hinted at the possibility of some of them tumbling off their chargers.

Lord Mayor's Day is a severe one for his Lordship. If he eats whenever viands are set before him, his digestion must be somewhat severely taxed; but he bears in mind that he will have to propose many toasts in the evening, in the presence of many distinguished guests. Whatever quiet family breakfast he partakes of, he joins many of the corporate officers in another breakfast in one of the council-rooms. Some little time afterwards a substantial luncheon is served, at which the new Lord Mayor makes his first appearance in his official robes with his array of officers around him. Meanwhile the procession is being organised out of doors; workmen as thick as bees are finishing the carpentry, upholstery, and decorations within and without Guildhall, and always belie the predictions of lookers-on that the work cannot possibly be finished by the evening. A Guildhall banquet to a specially great personage—Queen Victoria in 1837, the Emperor and Empress of the French in 1855, the Sultan of Turkey in 1867, the Shah of Persia in 1873, the Czar of Russia in 1874, for example—is additionally gorgeous; but the annual display on the 9th of November is admitted on all hands to be a splendid affair.

Of the procession as now usually conducted, we need say little; the newspapers tell their readers all about it on the following morning. The Lord Mayor generally manages that the procession shall traverse some part of the ward of which he is alderman, or pass in front of the hall of the Company to which he belongs, or in front of his own shop or warehouse: one or other of these feats is usually accomplished; but the achievement is not an easy one, owing to the narrowness of all except a few streets in the City of London. The most lumbering thing in the procession is the big over-adorned coach, which is said to cost a considerable sum for repairs every time of using. Some years

ago a Lord Mayor set aside this vehicle and rode in another; but this disregard of tradition was too much; the citizen sight-seers were dissatisfied, and the gilded coach made its reappearance next year. By far the most elegant part of the whole affair is the cortège of the two sheriffs; nothing in Europe can excel the carriages, horses, trappings, and liveries, in real excellence. The corporate officers mostly ride in their own carriages, as do the chief members of the great Companies. The military bands, the flag and banner bearers, the brave knights in armour (if any) are paid for their services; and bell-ringers are paid for ringing out joyous peals from about a dozen church steeples.

Where all the component elements of the procession stow themselves, during the introductions and ceremonial in Westminster Hall, is a mystery which only the metropolitan police can solve; but all being ready for the return to Guildhall, the procession is re-marshalled. And now it is that the Queen of the City first makes her public appearance. The Lady Mayoress joins the procession on its return; her elegant dress-carriage, her maids of honour, and her flashing diamonds give a grace to the display which it before wanted. The drums beat and the trumpets blare; the banners again display their gold and silver on coloured silk, and some of Her Majesty's cavalry help to make up the scene. It is generally dusk, in murky November, when the procession reaches Guildhall; and everybody is pretty well tired.

But the evening is an important one; and the Lord Mayor and Lady Mayoress must be ready to receive their distinguished guests. The Cabinet Ministers are invited, and attend in court dresses; as do ambassadors in the state dress of their own court; military and naval officers are in full uniform; judges in their scarlet gowns, flowing wigs, and square black caps; prelates in more sober garb; and certain gentlemen in dress-suits of black velvet. Grace being said, all sit down; and we may reasonably suppose that nearly a thousand persons cause the disappearance of a formidable quantity of savoury viands. The bill of fare does not differ much from year to year. Let us look at one of them: 250 tureens of real turtle, 6 dishes of fish, 80 roast turkeys, 60 roast pullets, 60 dishes of fowls, 40 of capons, 80 pheasants, 24 geese, 40 dishes of partridges, 15 dishes of wild-fowl, 2 barons of beef, 3 rounds of beef, 2 stewed rumps of beef, 12 sirloins and ribs of beef, 2 quarters of lamb, 30 entrées, 50 French pies, 60 pigeon-pies, 53 ornamented hams, 43 tongues, 60 dishes of potatoes, 6 of asparagus, 50 dishes of shell-fish, 60 dishes of mince-pies, 50 blancmanges, 40 dishes of creamed tarts, 400 jellies and ice-creams, 100 pine-apples, 120 dishes of cakes, 200 dishes of hothouse grapes, 350 dishes of other fruits—besides wines in liberal variety. An inequality in some of these items is due to the fact that on the dais, where the great personages are seated, the dinner is hot, served with great completeness; whereas the tables in the body of the hall, for the less distinguished guests, are mostly laden with cold viands—except the all-important turtle, which is hot.

It is during dessert that the healths are drunk and the speeches delivered. This is not the least remarkable feature of the proceedings; for the Lord Mayor, whatever may be the political party

(if any) to which he himself belongs, invariably invites Her Majesty's Ministers, and pays them handsome compliments on proposing their healths. The Prime Minister for the time being is nearly always present; and sometimes he avails himself of this opportunity (just midway between the past and the forthcoming sessions of parliament) to give an exposition of government policy. If the several speakers have the gift of humour, so much the better: their speeches accord better with the wine and dessert. Never does a distinguished guest (sometimes a royal prince) neglect to propose the health of the Lady Mayoress, and never does he forget to use the language of graceful gallantry in so doing.

Does the Lord Mayor get up with a headache on the 10th of November, after the luxuries and excitements of the preceding day? He had better not; for the duties of his office press upon him from the outset—commencing, it may be, with the hearing of police cases arising out of the street sight-seeing of the previous day. How the Lord Mayor attends to his own business as a manufacturer, merchant, or shopkeeper, during his year of office, the public are not told; in all probability, other partners in the firm take the burden off his shoulders. Few of them wish for a second year of office, even if the citizens were willing to confer it; for the honour is costly as well as laborious. Should, however, any special royal reception take place during the year, the Lord Mayor has a fair chance of knighthood; and then he is 'Sir' for the rest of his life. Should the occasion be *very* special, he is made a Baronet, with succession to his descendants—much to the gratification of 'My Lady,' of course. When the Lord Mayor is made a baronet, the sheriffs are generally knighted. Thus it has arisen that among the present aldermen of the City of London who have 'passed the chair,' four are baronets and seven knights.

As London in its widest acceptance is the largest and wealthiest metropolis in the world, so is London in its City limits of about one square mile the most remarkable of all for its corporate privileges, trade guilds, and civic splendour.

SENSATIONAL GYMNASTICS AND ACROBATISM.

A FEW months ago an accident happened in view of a Dublin audience, to a (supposed) female performer on the *trapeze*; she missed her hold, and was dashed against the ground with considerable force. Nor was the matter much mended when, a day or two after, a letter appeared in the papers, written by her or in her name, stating that it was *only* by the failure of a spring-board that the accident occurred, that she was *only* bruised, and that she hoped soon to reappear before her patrons the public!

Apart from considerations as to the propriety of such an exhibition as this, the question is, Who is to blame here? There are multitudes of persons in humble life not brought up to any regular trade, or influenced by unsettled habits, who seek to earn a living as public exhibitors. Tumbling, posturing, vaulting, somersaulting, rope-walking, rope-swinging, pole-balancing, *trapeze*-flying, lion-taming, all have more or less of danger attending them. And herein lies the evil. The public, or a considerable section of the public,

evinced a relish for witnessing feats which have in them an element of peril. The consequence of this may be easily traced. If people prefer the sensational to the graceful and elegant, they attend in greater number; the speculator or proprietor of the exhibition takes more money at the doors; he offers a higher salary to the performer, and the latter is thus tempted to try more and more dangerous and daring feats. It would be better if these matters could be regulated by the good sense of the public than by legislative or governmental interference; but so long as the taste of sight-seers has a leaning towards hair-breadth escapes, so long will there be a succession of exhibitors and performers ready to make money out of it.

The danger attending *trapeze* feats can easily be understood. Two ropes are suspended vertically, and two horizontal bars are fastened to them, one above another. The performer usually springs up, catches hold of the lower bar, and achieves various acrobatic twistings and turnings, now on his head, now hanging by one foot, now twisting like an eel between the upper and lower bars, now dropping head foremost from the upper bar to the lower. Any slip of hand or foot, and down he falls. Some years ago in London a man combined this acrobaticism with *aërostation*. He ascended in a balloon, and when at a height measured by hundreds of feet, went through a series of performances on a *trapeze* suspended under the car. Whether the height were hundreds or thousands mattered little to him; a fall would dash him to pieces in either case. The proprietor of the gardens received a larger number of shillings or sixpences on this occasion than if an ordinary balloon ascent only had been announced; and thus a *trapeze*-performer was tempted to hazard his life by the receipt of an additional fee. An increase of peril occurs when two *trapezes* are suspended many feet or even yards apart; the acrobat swings or takes a flying leap from the one to the other, loosing hold of the one and afterwards seizing the bar of the other. The slightest miscalculation of distance may be fatal. Léotard, the hero of this kind of achievement, performed the feat on five or six *trapezes* in succession, turning a somersault between each two. He was amazingly successful in a commercial sense, receiving a high salary. Mark the consequences; imitative Léotards have been numerous, and many a broken limb or life-injury has resulted. (We may here remark, in parenthesis, that a clever 'Automaton Léotard' was exhibited at the Polytechnic Institution a few years ago; a life-size figure that performed in a neat and complete way many of the tumblings of a *trapeze* performer—those in which the hands do *not* quit hold of the bar; and latterly we have witnessed the pleasing performance of Heller's automaton *trapezist*, which hangs by its feet as well as by the hands.)

Walking head downwards is another of these fool-hardy displays. The ceiling, prepared for this exhibition, is provided with grooves, slides, or springs, barely perceptible to the audience, but sufficient to give a hold for an instant to a peculiarly shaped boot; the performer is suspended from one foot while he thrusts out the other to catch hold of the groove or spring; and thus laboriously wends his way onward, step after step. If he fails to insert one foot before freeing the other, we know the inevitable result. In one exhibition, several

brass rings were suspended in a circle, and the performer made his way from one to another, holding on by hands or by feet as the case might be. A netting, spread out some distance under him, or soft mattresses placed on the ground, lessened the probability of broken bones; but the very provision of such precaution sufficiently shews that peril is known to be involved. (It may here be remarked that there was a netting some distance below the trapezist to whom the accident lately happened; but it failed in its intended service, and she (or he) fell heavily twenty or thirty feet to the ground.)

Tight-rope walking is one of those achievements in which the slightest mishap of footstep, the slightest failure of nerve, brings the gymnast to grief. The famous Blondin eclipses all other exhibitors in this line. The baskets on his feet, the blindfolded eyes, the wheelbarrow trundled before him, the chair, the table set out with refreshments, all balanced on a stretched horizontal rope—these are marvels indeed. It shews what a morbid state of feeling, however, is engendered by this exhibition, when Blondin pretends to miss his foot-hold once now and then, and regains it after quivering movements of the body and limbs, in order to send a thrill of terror through the spectators! One of his achievements is to carry Madame Blondin while he walks his thousand feet or so of rope; but this has been found *too* much for English taste to bear, and it is not included in his regular programme. The veteran may possibly be so completely void of bodily fear and nervous trepidation as to be nearly as safe on the rope as on the ground, and may die a quiet natural death when his course is run. But his example has not been without evil effect. There have been and still are 'English Blondins,' 'Female Blondins,' and 'Juvenile Blondins,' who imitate some of the perilous exploits as a means of earning a livelihood; many and many a limb has been shattered, or neck broken, in consequence. In the days of our fathers, or perhaps grandfathers, one Madame Saqui obtained great notoriety for her achievements on the tight-rope; if we remember rightly, her career was cut short by a frightful accident; but whether so or not, it is certain that a 'Female Blondin' only a few weeks ago came down with a crash while attempting to cross the auditorium of a theatre on a rope—with what result we need not say.

The slack-rope has its heroes and heroines as well as the tight-rope—and its victims also. Why the performer does not fall off, while sitting on the rope in full swing, with arms folded, and no hold or grasp by the hand, is a mystery and marvel to many of the audience; and the greater the marvel the greater the attractiveness—according to the logic of showmen and exhibitors. The fact is that the performer is familiar with a law of dynamics without knowing or caring about its scientific meaning: a law which tells him that he must incline his body backward during the onward swing of the rope, and forward during its reverse swing. A wonderful exhibitor appeared amongst us many years ago, though not so many as to be beyond the recollection of some of us: an Italian or Spaniard who chose to assume the professional title of 'Il Diavolo Antonio.' His slack-rope swinging was daring beyond precedent, and he had few followers who could equal him. The pendulum movement

of his body during the full swing of the rope was in a curve of very wide sweep. While sitting on the rope in sweeping oscillation, he would tie his right ankle to it with a piece of cord half a yard or so in length; then, when at the utmost extremity of his onward course, he would fling himself from the rope, and hang head downwards, attached to the rope by one ankle only; assuming very nearly the traditional attitude of 'Fame blowing the trumpet,' he played on a horn or bugle, accompanying the orchestra in the 'overture to *Lodoiska*,' with his head farther from the rope than any part of his body and limbs, and consequently swinging in a greater arc than even the rope itself. What applause! What a thrill of excitement! What a fascinating horror at the supposition of the cord breaking or the ankle-fastening becoming loose! But look a little behind the scenes. Many a coroner's inquest has recorded the dismal end of some or other of these rope-swingers; poor mangled creatures who have died in giving 'pleasure' to others. We must 'take the gilt off the gingerbread' before we can rightly estimate these things.

Circus-riding, when kept within moderate limits, is often very elegant. It illustrates two scientific principles that are ever operative in such exhibitions. One is, that the horse and his rider must both incline the body towards the centre of the ring, else the centrifugal force of the circular motion would soon bring them to trouble, pitching one or both at a tangent over among the spectators; and the higher the speed the greater must be the angle of this inclination. The other is, that the rider, standing on the horse, may leap up and down in various ways, and may jump over bars and shawls, or through hoops or casks, and yet alight upon the horse again although in a gallop. This is because the rider partakes of the onward motion of the horse, and is really moving on when he seems to be only jumping up. But oh, the falls, bruises, and disasters that have to be encountered before the smiling, be-rugged, tinselled performers are fitted to make their bow or courtesy to the public! An 'Ella,' or an 'Elise,' or an 'Angelique' has to pass through a wearisome, long-continued, prosaic discipline before she can appear as a fascinating equestrienne, jumping through hoops of fire, or dancing in a *pas de deux* with a male performer on two horses. How many broken limbs occur during the apprenticeship, the public never know; the 'profession' does not talk of those things; but Mr Frost, who has written some singularly curious books about showmen, circus-riders, and other public performers, has much to tell concerning the ordeal which such persons have to undergo—the fractures, the bruises, the heartaches, the poverty, the disappointments, too often ending in untimely death. It is noticeable, he remarks, that they are mostly quiet people in private life—rather serious than 'jolly,' and very little prone to drinking. The necessity for maintaining keen eyesight and steady nerves, in an occupation naturally perilous day after day, makes a man cautious against 'putting an enemy in his mouth to steal away his brains.' Perhaps it is an effect of reaction that those who earn a living by making others laugh are often melancholy rather than gay when removed from the glare of stage-lights. Such was Liston, and such was Grimaldi. When the performance is intended to excite wonder at feats of peril, there is an additional reason why

the performer should be anxious, careful, often foreboding.

Lion-tamers, men who dally with the animals in a menagerie in make-believe play, are special examples of sensational heroism. When a man lies down in a den among lions or tigers, opening the mouth of one, leaning upon another, taking the huge paw of a third, and ending by putting his head into the opened mouth of a fourth, he does one of two things—he either shews what a poor spiritless thing a lion becomes when under the discipline of fear, or he exposes himself to danger of a most horrible kind. What those men go through before they have trained themselves and tamed the animals up to the required point, can be known only to themselves; but it is known that moments of agony fall to their lot when spectators are wondering and applauding; some movement on the part of a caged animal, some look of the glaring eye, tells the experienced exhibitor that it is a mere toss-up (to use a homely phrase) whether a fatal catastrophe is imminent. In the days of Van Amburgh, the most famous of all 'lion-kings,' it used to be said that one visitor attended the exhibition night after night, fearing lest he should be absent when the final scene of the 'king' being torn to pieces should occur. The story may have been an exaggeration; but there can be no doubt that the feeling excited by such an exhibition is a morbid one. Of the Spanish bull-fights we will not speak; the exhibitions in our own England are quite sufficient to illustrate the point in hand.

'Strong men' and 'strong women' are among the attractions at country fairs; and when a second Hercules or Samson is really keeping within the limits of his exceptional muscular development, no great harm is done. If a man can twist an iron bar into a knot, or hang half a ton weight round his neck without hurting himself, and if he can earn a living more easily in this way than by ordinary work, we will not criticise him too closely. But it is a depraved taste that encourages women to such displays. To bear two weights of fifty or sixty pounds each suspended from the hair, is unfeminine enough; it is much worse to see a woman lying down, shoulders on one chair, feet and ankles on another, an anvil placed on her body, and two men wielding heavy hammers on the anvil! William Hutton's strong woman, Phoebe Bown, who could lift a hundredweight with each hand, carry fourteen stone, or walk forty miles a day, was not an exhibitor; she honestly earned her living at the mannish employments of driving a team, guiding the plough, thatching ricks, and breaking-in horses; disliking the womanish avocations of sewing, knitting, spinning, and cooking.

Legitimate exercises carried to excess lie beyond the range of feats which we have here in view. The training of boys and youths in a gymnasium ground is an excellent thing, strengthening the muscles and expanding the chest; but to stand on your head on the top of a pole is neither useful nor ornamental. Pulling an oar on a pleasant stream is beautiful and invigorating exercise; but it may be doubted whether emulation does not carry the Oxonians and Cantabs too far in the violent struggle of the annual boat-race on the Thames; constitutions have been permanently injured by this. Swimming is so capital a thing, so useful for everybody to learn, that we welcome any encouragement given to it

by striking displays in our rivers and channels; yet here again there is a loophole for strivings much better avoided. Captain Webb has done what no one ever did before, and wisely resolves to rest content without straining for further glorification; but he has had imitators who narrowly escaped drowning while attempting that which they could not accomplish; and he has unintentionally been the means of tempting a new class of exhibitors—girls or young women who, clad in pink fleshings, make a public display of swimming ten or twelve miles down the Thames, nearly hemmed in by steam-boats laden with sight-seeing visitors, mostly of the opposite sex. Even well-to-do folks who climb mountains are a little too prone to the sensational in connection with emulation. To go halfway up the Matterhorn is as useful as to reach the summit; but then the glory—and the danger!

TIGER TALES.

It was guest-night at our regimental mess in A—, and conversation ranged over a vast variety of topics. After dinner a few officers, myself for one, left the table and adjourned for a chat to the smoking-room. I chanced to sit near an elderly gentleman who had been my opposite neighbour during dinner, and with whom I had already exchanged a few observations. His manner was courteous and agreeable; he was the guest of the regimental surgeon, who had been in India for several years; and I inferred from the conversation of Mr Humfrey—for this was the gentleman's name—that he was a Bengal civilian of long standing, only lately returned from India. He spoke with great approbation of the Prince's pluck and endurance in India, where he and his companions had incurred no inconsiderable risk. Allusion was made by an officer to the incident of a tiger having sprung on the elephant on which the Prince was riding; when His Royal Highness, without apparently the least discomposure at the near vicinity of the savage beast, had taken steady aim from the howdah, and shot the tiger as he clung behind.

'A pretty close shave that must have been for the Prince,' observed a young officer who had been listening.

'In such a case the danger is really less than you might suppose,' replied Mr Humfrey. 'The tiger rarely makes a second spring when his first has failed of its object: he appears to be disappointed and cowed, and if permitted, will generally slink back to the jungle without attempting any further attack. Instances to the contrary are of course known; but this is their usual habit, and I have heard of many marvellous escapes made in consequence of it. Two gentlemen, friends of mine, were travelling together up country some years ago, in a carriage belonging to one of them, drawn by a pair of very good horses, with a native coachman and other servants. A little way from the road was a fine point of view, which one of them had not seen. His companion had been there before, and offered to take him to it. Quitting the carriage, and desiring the servants to remain with it under the trees of a jungle-wood by which they were passing, they walked to the place where the prospect was to be obtained. Having seen all they wished, they returned to the spot where the carriage had been left; but not a trace of it or of

any of the servants was to be found. Wondering what could be the cause of their disappearance, they shouted loudly, and strolled in various directions through the wood to look for any signs of them. Presently they were hailed by some one from the branch of a tree high above their heads; and looking up, they perceived one of the native servants cowering close to the trunk, making gestures expressive of extreme terror.

"What are you doing up there? Come down directly," said his master angrily; and with the slavish obedience of the domestic Hindu, the man slid rapidly down, and with pressed palms stood trembling before the two gentlemen.

"What is the meaning of this? Where is the carriage?"

"When you gone, Sahib, tiger came," replied the man, shivering at the very remembrance of his fright—"tiger came; jumped at horses; all gone away in jungle."

"That they were all gone away was sufficiently evident—very unpleasantly so, when they discovered, by further examination of the servant, that as they were quietly resting under the shade of the trees, the horses suddenly became fidgety and pricked their ears; a slight rustling was heard among some bushes on the opposite side of the road, and in a moment more a large tiger had stolen from among them, paused for an instant, and then made a bound with the intention of alighting on one of the horses. The instinct of self-preservation made the terrified animals dash furiously forward, and the tiger missed his aim and fell harmlessly on the ground. Apparently he was disgusted by his failure, for he tried nothing more; but after one sullen glare at the retreating vehicle, he gave a low angry growl, and turning away from the spot, was soon lost to sight in the long grass of the jungle. One or two of the servants had disappeared with the carriage. This man had run a little way, and then climbed a tree, from which he had not ventured to descend until he heard the voice of his master. Of course, the tiger might still be lurking near, and a fresh attack might not have the same result. So the two gentlemen hailed with satisfaction the return of the runaway carriage and horses, which had been secured after a short run; and all felt extremely thankful that their search for the picturesque had not brought them in contact with an object more striking than agreeable, the black and yellow stripes and gleaming eyes of a hungry Bengal tiger, on the outlook for what it might devour."

"Wonderful escape!" "Extraordinary good luck!" "Shockingly unpleasant position!" we variously exclaimed on the conclusion of Mr Humfrey's anecdote. "The tiger could not have been in a very voracious frame of mind, however," I continued, "or he might surely have retrieved his first error, and had a meal off somebody. Your friends must have rejoiced to find themselves well out of the jungle, and under the shelter of a comfortable roof."

"No doubt of it," said Mr Humfrey, smiling; "and yet incidents of that kind soon fade from the memory. I could relate dozens of similar hair-breadth escapes; and most probably my friend Dr Laurensen could do the same. Tigers and snakes are always unpleasant possibilities when one travels in India; eh! Laurensen?"

The worthy surgeon thus appealed to gave a few vigorous whiffs at his cigar, and then removing it from his lips and beginning leisurely to knock off the ashes, he observed: "Well, I daresay I could tell you of one or two surprising experiences in that line.—You, sir," he continued, addressing himself to me, "made the remark that those travellers would be glad to find themselves safe and sound beneath the shelter of a roof. I'll tell you of an occasion when your humble servant felt that gratifying sensation in no ordinary degree; not for myself alone, I am bound to say, but for others also, who were in some measure under my protection."

He saw we were all listening attentively; so, resigning himself to the loss of his cigar, he reflected for a moment, and then continued: "Some years ago, while serving with the 300th in Bengal, I had a pretty smart touch of fever; and when able to move, I was invalidated for the time, and went to a place on the hills to get up my strength again. The scenery all round was remarkably pretty: high hills, many of them wooded to the very top; romantic crags crowned with brushwood jutting out every here and there; and various light bungalows, as the Indian houses are called, peeping from among the foliage, placed there to serve as residences for those who sought the hill-station to try to re-establish their failing health. It suited me very well, and I soon began to pick up: indeed I felt so well that I was on the point of returning to my duty, when I received a letter from a young fellow, son of an old friend in England, saying that he was on his way to join his regiment with his bride, and if I could take them in for a few days, they would be very glad to give me a call in passing. Hospitality in India is one of the cardinal virtues; less so now, perhaps, than it used to be; but at that station we were all very hospitable, and besides, I was only too happy to welcome the son of my old friend. In due time Captain and Mrs Hastings arrived; he a fine manly young soldier; she the prettiest little creature, of nineteen or twenty, that any man could wish to call his wife: fair hair, lovely blue eyes, and a complexion of lilies and roses, most refreshing to eyes long accustomed to the pale cheeks of Indian beauties."

"This lady sang sweetly to the guitar; and looked perfectly bewitching as she sat in the veranda with a blue ribbon round her neck, playing on the instrument which she had brought up with her. She was a very good artist too, and sketched cleverly from nature. She had a book of English sketches with her, so I was able to judge of her capabilities; and when she said she should like to take some views of the scenery near my bungalow, I felt only too happy to assist her in doing so, and never dreamt of warning her against any danger more serious than sunstroke. To avoid this she went out on her sketching expeditions either in the early morning before the heat had become troublesome, or in the cool hours of the evening, more generally the latter; her husband always accompanying her, and usually myself too. I certainly knew that in such a locality as this tigers were not an impossibility; but I had never given them a thought. No one had spoken of them as being in the neighbourhood; and one generally hears when such unpleasant gentry are about. Not very far from my bungalow there was a very

pretty water-fall, surrounded by picturesque rocks and greenery; just the sort of place to delight an artist; and I accordingly proposed to Mrs Hastings that she should make a sketch of it. She was charmed by the suggestion; and we three set off one lovely evening, as soon as the temperature permitted of our climbing the rather steep winding path that led to the spot. It was a narrow, roughly formed track, and we walked singly, I leading the way, and Captain and Mrs Hastings behind. Sometimes she paused for a few moments and drew her husband's attention to some wild-flower or similar object, and I had got a little in advance, and came to a point in the road where it turned sharply round some rocks, not a great way from the cascade, the murmur of whose water I could now hear distinctly. Here I halted to recover breath, and to let them come up with me; when suddenly, in the perfect stillness of the evening, I heard a slight rustling and crackling among the bushes just beyond the rocks; and glancing round to ascertain the cause, I saw what made every nerve in my body quiver violently, and seemed to bring my very heart into my mouth, as the saying is.

'At this juncture a huge Bengal tiger, one of the largest I had ever seen, emerged from among the shrubs not forty paces from me, and with a swinging deliberate movement began to cross an open space bordering the path that led towards the water-fall. I neither moved nor spoke, but gazed with stupefied horror at the savage beast, unable for the moment to decide on any plan of action. The tiger immediately perceived me and stopped; for one or two seconds only, though they seemed an age to me, I do assure you, we stared fixedly at each other, when, to my unutterable relief, he lazily half-closed his fierce yellow eyes once or twice, gave a slight wave to his tail—I think I see him now!—and without taking any further notice of me, went slowly off in the direction of the water-fall. Doubtless, the creature was on his way thither to slake his thirst, an object which was probably for the time of paramount importance with him. He had also probably lately dined, to which fact might chiefly be attributed his indifference to food so very close at hand as myself. As he disappeared from sight my assurance returned to me; and knowing that he was only a little way off, and might think better of it at any moment, and spring upon us unexpectedly, I felt most anxious to get my young friends and myself out of his immediate neighbourhood with the least possible delay. They had now reached the spot where I stood; and while Mrs Hastings stopped again and began to fan herself, for the evening was very sultry, I affected to shew her husband something on the rock beside me, and whispered to him hurriedly: "For my sake, get her home! Make some excuse; but get her back as quickly as you can!"

'He glanced at me—saw by the expression of my face that something was wrong—and turning at once to his wife, who was unconsciously fanning herself with her eyes closed, he said hastily: "Eva, my darling, I am not well; I should like to go back at once. Come quickly."

'She opened her blue eyes very wide, and looked first at him, then at me. My face must have betrayed me, for she said very quietly: "What is

it? Fred is not ill. You have seen something. I am quite ready; let us go at once."

'Courageous little woman! Not another word did she utter; but with white face and set lips she walked firmly and rapidly down the path we had just mounted. Her husband kept close to her; I followed them a few steps behind, my ears strained to the utmost for any rustle that should betray the neighbourhood of the tiger; and more than once my heart gave a bound as one of us stepped on a rotten twig and it cracked noisily across, or a stone touched by the foot rolled down in front of us and loosened a little of the dry soil. We walked fast and in perfect silence; but the way home seemed twice the length it had done when we came: minutes feel like hours in such circumstances. We saw nothing more of the tiger, and reached home safely. When I saw the lovely brave girl and her young husband again under my roof, and realised the frightful danger to which they had been exposed, I must say I was indeed truly thankful for their escape and my own. Mrs Hastings was rather pale and nervous for the remainder of the evening, and willingly acceded to my request that there might be no more sketching expeditions while they were with me. The wisdom of this resolve became more manifest, and our miraculous preservation all the more striking, in a day or two. A poor woman and her child were killed by the monster the very next day, and a native postman a day or two later; and it was evident that the tiger was a new-comer, and a very undesirable acquisition to the neighbourhood. A party of sportsmen was formed, therefore, as speedily as possible, Captain Hastings remaining longer than he intended in order to join it; and after several hours of close tracking and beating, the tiger took refuge in a clump of bushes, from which he was speedily dislodged, and stretched on the ground with a bullet through his head. He was an enormous brute, measuring fully nine feet from his snout to the tip of his tail. Being very beautifully marked, his skin was taken off and presented to Mrs Hastings by the man who shot him, as a souvenir of her dangerous evening walk.'

Some further conversation and one or two other anecdotes followed. It was now getting late, and some of the guests glanced at their watches. 'Before we finish this discussion, I must tell you a tiger story myself,' said Colonel Darley, the commanding officer of the 188th. 'It is rather different from those we have heard, but I daresay it will amuse some of the youngsters. A good many years ago I served in the same regiment with a young fellow of the name of Waldron. He was a pleasant sort of fellow in his way, but rather inclined to be extravagant; and he was a little eccentric and queer; had "a bee in his bonnet," as our friends across the Border would say. He was continually picking up odd pets of various kinds, more like a school-boy than a full-grown man; and we were always laughing at him about his collection of birds and animals, owls, white mice, squirrels, a fox, monkeys, and so on. But he took it all very good-naturedly, and went on adding to his menagerie, as we termed it, whenever he came across any specimen that hit his fancy. One morning our colonel was writing in his business-room, when a knock came to the door, and on his desiring whoever it was to enter, Mr Waldron walked in.

"I beg your pardon, sir; I am perhaps interrupting you."

"Not at all, not at all," replied the colonel. "Did you wish to speak to me about anything?"

"Well, sir," said Mr Waldron, in a slightly hesitating manner, "I have just come across a nice little tiger; but I thought before bringing him here I ought to see whether you have any objections to my keeping one."

"Objections! Mr Waldron; not I," replied the colonel, who, as it happened, had just been writing about a butler or man-servant for his sister, and never doubted that the "tiger" his subaltern spoke of was a small boy for going errands or some such occupation. "I have no right to interfere with matters of this kind. Unless, of course," he added, suddenly remembering that the young officer was said to be rather extravagant; "I conclude you are quite able to afford the expense?"

"Oh! certainly, sir," said Mr Waldron, smiling; "that will be a mere trifle, nothing to mention."

"Well, I should suppose so," said the colonel.

"Very good, sir: you don't mind it at all. That's all right. I only thought I'd better ask you. Good-morning, sir."

"Good-morning," replied the colonel; and as the door closed behind his officer, the colonel resumed his pen, half thinking to himself as he did so: "Odd young fellow that; I wonder why he fancied I might not like his tiger." But he understood Mr Waldron's scruples, and admitted their propriety most unhesitatingly, a few hours afterwards.

'Evening came, and with it the mess-hour. We were all assembled, and about half-way through dinner, when suddenly a terrific uproar arose outside in the barrack-yard. Wild cries and shouts, the screams of women and children, and the noise of horses madly tearing about the yard, caused us all to rush from the table to find out the cause of the unusual disturbance. We found everything in confusion—all the horses loose, galloping about in frantic terror; and as several people spoke at once and very excitedly, it was not easy at first to ascertain what had happened. The colonel's voice restored comparative order. "What is it? What is the meaning of this?" he sternly demanded.

"It's the tiger, sir! the tiger!"

"The tiger!" repeated the colonel in amazement. "What tiger?"

"Mr Waldron's tiger, sir; it's just come. We put it in beside the horses, in a spare stall; and it frightened them, sir, very badly, and they all broke loose."

"A tiger among the horses!" reiterated the colonel. "What can the fellow mean!" Then observing the figure of Mr Waldron disappearing in the direction of the stables, a light seemed to dawn upon him, and he stamped his foot with vigour, and gave vent to his feelings in some rather strong expressions, which I shall not repeat here. In another moment he was roaring with laughter, in which we all joined, though with but a partial comprehension of the cause of his merriment. However, it was all quickly explained. Mr Waldron had been fascinated by the attractions of a young tiger-cub, and strongly wished to become its possessor; but feeling it to be rather a peculiar pet, he thought he had better obtain permission to keep it before entering on the purchase.

'He never dreamt of mystifying the colonel, and

had no idea his object was misunderstood. The cub duly arrived—a well-grown young animal, and for the time being, was consigned to a spare stall, to the unrestrainable terror of the horses, who smelt the tiger and became excited, and when he began to growl, dashed violently about, burst their fastenings, and got out into the yard, where they made the commotion that had disturbed us. The tiger was speedily removed, order again restored, and Mr Waldron was requested to confine his acquisitions for the future to less alarming kinds of animals. For many a day, however, "Waldron's tiger" was a standing joke in the regiment, the colonel enjoying the story as much as any one. "No more tigers here, my dear fellows; we'll take lions instead—when in action."

We all laughed heartily at Colonel Darley's anecdote, and declared it was capital.

'And a positive fact,' said the colonel. 'It really happened.'

THE MONTH:

SCIENCE AND ARTS.

THE Institution of Civil Engineers have during many years published reports of their meetings and discussions under the title *Minutes of Proceedings*. Bound in compact octavo volumes, these *Proceedings* are distributed among the members of the Institution, who thereby are kept informed of the principal undertakings and incidents in civil engineering, and of improvements gained by experience. At the beginning of last year the Council of the Institution made a change which has increased the value of the publication, for, in addition to the minutes of proceedings, they give 'selected papers' on important subjects, and 'abstracts of papers in foreign transactions and periodicals,' and thus make their members acquainted with what is going on in all parts of the world. These abstracts range over the whole theory, practice, and science of civil engineering, as may be inferred from the fact that there are one hundred and twenty-three in the last two volumes. Is any one desirous to know something about the St Gothard tunnel—the diminution of water in springs and rivers—remedies against landslips—distribution of velocities in a current—the pollution of the Seine—protection of inflammable materials against fire—relation between galvanic resistance and motion of conductor—application of the tuning-fork in electric telegraphy, or about many other subjects?—he will find them set forth in the work above mentioned, which is published at the house of the Institution, 25 Great George Street, Westminster.

Inventors who through want of occupation consider themselves neglected, should read the list of *Subjects for Papers*, comprising ninety-six subjects, published by the Institution of Mechanical Engineers early in the present year. Machinery and mechanism of every kind appear to be therein mentioned, and to afford scope for every kind of faculty. We quote a few examples: Steam-engines, boilers, pumping-engines, blast-engines, locomotive engines, steam road rollers, hot-air engines, water-wheels, wind-mills, sugar-mills, oil-mills; lace, knitting, and rope-making machinery; saw-mills, wood-working and stone-working machines, hammers, locks, lifts, pressure-gauges, sluices, well-sinking, dredging, blowing-fans, signals, telegraphs.

From this selection the great variety of subjects in the original list may be judged of. Anything wise and new on any one of them could hardly fail to be well considered if addressed to the Secretary at Birmingham.

The question is often asked: How are young men who cannot obtain entrance to a factory as apprentices, to learn a mechanical trade? An answer has been given in the Russian department of the Centennial Exhibition at Philadelphia by display of models and other appliances from the Imperial Technical Schools of St Petersburg and Moscow. In the words of an American contemporary, these collections 'demonstrate the feasibility of so educating pupils, that when they pass out from the doors of their school, they will have become at once scholars in their learning from books, and proficient as educated workmen in the varied branches of the workshop. These young men on leaving college are quite as able to demand work as journeymen as the average of mechanics when out of their time, for they will have performed by unaided effort such feats in workmanship as none but skilled workmen can do. The demonstration of the Russian school is that this practical instruction can be given in the fullest range and quality, not only without interfering with, but positively to the advancement of other indispensable professional studies.'

The *Science Papers*, chiefly *Pharmacological and Botanical*, of the late Daniel Hanbury, have been collected and published with illustrations in a handsome volume. There is also a Memoir of the author, which sets him forth in his true light as one of the ablest and most amiable of botanists and pharmacutists. His industry was only equalled by his knowledge, and both were of the highest order, and his death at the comparatively early age of forty-nine was alike a loss to society and to science. The author of the Memoir closes it with a few words which under present circumstances are worth consideration: 'Those who think that easy circumstances and leisure are favourable to intellectual effort are tremendously mistaken.'

Artillerists and military engineers have something to talk about in the eighty-one-ton gun which has been transported from Woolwich to Shoenbury, where it throws its ponderous shot to a distance of five miles, and could double that distance if required, and with less noise than is made by guns not half the size. When four such guns are mounted in the turrets of the huge ironclad destined to receive them, she will be a formidable vessel either for attack or defence; able to batter an enemy's fortress from a distance of three miles. But already this monster gun has a rival, for guns weighing a hundred tons each have been constructed at Elswick on the Tyne for the Italian government; and as they have been shipped to Italy, we shall soon hear of their achievements.

An allied topic is the blowing up of the dangerous reef of rocks which has for ages encumbered the channel between New York and Long Island, and with so much furious tidal commotion, that the first settlers named it Hell Gate. The mass of rock to be removed to make a clear channel twenty-six feet deep was about seventy thousand cubic yards. Miners have been at work upon it for seven years: fifty thousand pounds of dynamite were packed in the borings and excavations; and on Sunday, September 24, the whole was fired.

Beyond a slight tremor and a gush of water and smoke, nothing was seen or heard. Some of our readers may perhaps remember that Hell Gate and its neighbourhood was the scene of one of Washington Irving's early stories.

A certain mechanical philosopher has argued that the world would be happier if there were no friction. But how is friction to be abolished? We all know that preparations of grease and oil are used to ease the running of machinery; and from time to time other substances for the same purpose have been talked about. The latest (or newest) of these, an American invention, is called *Metaline*. It is composed of various pulverised ingredients formed into solid plugs by hydraulic pressure. These plugs are fitted into holes on the inside of axle-boxes and the bearing-pieces called 'bushes' by machinists; their effect is such that neither oil nor grease is required, and the wear of the rubbing surfaces is much less than in machinery constructed in the usual way. Whether metaline is applicable to marine engines, to locomotives, railway cars, and all rubbing surfaces of metal, remains to be proved; but we are informed that it has been introduced with advantage into factories in the United States and in Scotland. If wear of metal and the cost of oil and grease can be saved by the use of metaline, the advantage will not be trifling. Readers interested in the question may apply for further information to J. Wallace & Co., Dundee.

From a Report recently published by the Meteorological Office, we learn that one of the difficulties—and a serious one—in weather telegraphy is the frequency of errors in the telegraphic despatches. These despatches contain numerous figures, and hence are perhaps more liable to error than a despatch of words. There are twenty-nine weather stations connected with the Office in the British Islands, and their total number of errors in a year is about two thousand. Of storm-signal stations round the coasts, including the Channel Islands and the Isle of Man, there are one hundred and thirty. When all the lines are in good working order, the Head Office (116 Victoria Street, Westminster) receives fifty-one Reports every morning and nine every afternoon, except on Sundays, from stations which range from one end of Europe to the other—from Christiansund in Norway to Corunna in Spain. Most of the telegrams arrive in London about nine a.m., when the Intelligence Department of the Post Office extracts from them the portions required for its wind and weather Reports. By eleven a.m. the functionaries of the Meteorological Office have reduced and discussed the details for the Daily Weather Report, copies of which are at once supplied to the evening papers. A brief telegraphic summary is despatched to the Ministry of Marine in Paris, and if necessary, intelligence of storms or of atmospherical disturbance is sent to our own coasts and to foreign countries. Later in the day, the afternoon Reports come in, and the Daily Weather Charts having been printed, are distributed by post. Besides all this, a telegram of the weather at fourteen of the principal stations is sent every day to the Underwriters' Rooms at Liverpool, and all the information forwarded to our coasts is also communicated to Lloyd's at the Royal Exchange, where it is posted up for the use of the members.

From the beginning of the present year *The*

Times has published a daily chart of the weather. In order to provide the latest information, the Meteorological Office is kept open till nine p.m., and the particulars then received are embodied in the special chart which appears in *The Times* the next morning. The extra expense (about five hundred pounds a year) which this arrangement involves is defrayed by the owners of the enterprising newspaper. It may be interesting to add that copies of *The Times*, despatched at an early hour each morning from London, are now received in Edinburgh between three and four o'clock in the afternoon, and are spread broadcast over the more northern towns in the course of the evening—thanks to the 'Flying Scotchman.'

The meeting of the British Association at Glasgow brought out statements and communications some of which are so important as to demand notice, however brief, in a chronicle of science. Professor Young's address to the Geological Section placed questions, much debated of late years, on a footing which may be taken as a new point of departure in future discussions concerning the age and constitution of the earth. 'So far,' said the Professor, 'as our present knowledge goes, we must accept it as certain that there is some limit to the duration of the earth in the past. Neither philosophers nor astronomers are agreed on the essential points of the problem; nor have they considered all the possible changes in the position of the earth's axis, and in the rate at which the earth loses heat. Neither have geologists so accurate a knowledge of geological processes that they can speak with confidence either of the absolute or relative rates at which rock formation has advanced. The geologist has hitherto asked for more time, not because he himself was aware of his need, but from a generous regard for the difficulties in which his zoological brother found himself when he attempted to explain the diversity of the animal series as the result of slowly operating causes. The geologist asked for more time simply because he could form no just estimate of what was needed for the physical processes with whose results he was familiar. But palæontological domination is now at an end; and the increasing number of geologists who are also competent physicists and mathematicians appears to mark a new school, which will strive to interpret more precisely the accumulated facts.'

Sir William Thomson's address to the Mathematical and Physical Section dealt with questions that seem unapproachable, but which will occupy the minds of physicists for many a year to come. What is really the geological age of the earth?—Is the earth an absolutely rigid mass, or has it a certain amount of flexibility? The effect of rigidity on the earth's rotation would differ from that of flexibility. For some years astronomers have been aware of 'variations in the earth's rotational periods,' and these variations are supposed to have been produced by the friction of the tides. The amount of friction would vary according as the earth were rigid or flexible. Investigations of the question from the date of the first recorded eclipse, 721 B.C., lead to the conclusion that the earth, as a timekeeper, is going eleven and a half seconds slower per annum now than then. And taking recent observations, 'it seems,' says Sir William, 'that the earth was going slow from 1850 to 1862, so much as to have got behind by seven seconds in

these twelve years, and to have begun going faster again, so as to gain eight seconds in the period 1862—1872.' This irregularity implies a change of sea-level occasioned by elevation or subsidence; and the same eminent authority assures us that 'a settlement of fourteen centimetres in the equatorial regions with corresponding rise of twenty-eight centimetres at the poles would suffice;' and that this change 'would be absolutely undiscoverable by astronomical observatories.' These may be regarded as transcendental questions; but some day they will be found susceptible of practical application in science and the arts.

Sir William Thomson having visited the Philadelphia Exhibition as one of the British Commissioners, had something to say about science in America; the deep-sea soundings; the coast survey; the hydrographical researches which, as he confidently expects, will supply the data from tidal observations, by which the amount of the earth's elastic yielding to the distorting influence of the sun and moon will be measured; 'and the fresh marine survey of terrestrial magnetism by the Compass Department, which, as is anticipated, will supply the navigator with data for correcting his compass without sights of sun or stars.'

'In the United States telegraphic department,' continues Sir William, 'I saw and heard Elisha Gray's splendidly worked out electric telephone actually sounding four messages simultaneously on the Morse code, and clearly capable of doing yet four times as many with very moderate improvements of detail. And I saw Edison's automatic telegraph delivering a thousand and fifteen words in fifty-seven seconds. . . . In the Canadian department I heard "To be or not to be" (and various messages) through an electric telegraph wire. All this my own ears heard. The words were shouted with a clear and loud voice by my colleague-judge, Professor Watson, at the far end of the telegraph wire, holding his mouth close to a stretched membrane, carrying a little piece of soft iron, which was thus made to produce, in the neighbourhood of an electro-magnet in circuit with the line, motions proportional to the sonoric motions of the air.'

It will warm the hearts of readers on both sides of the Atlantic to be told that there prevails in America 'the truest scientific spirit and devotion, the originality, the inventiveness, the patient persevering thoroughness of work, the appreciativeness, and the generous open-mindedness and sympathy, from which the great things of science come.'

NOTICE TO OUR READERS.

IN the present monthly part is completed the interesting story by Mr Henry W. Lover, entitled *Following up the Track*. In November will be commenced, and will continue till the end of December, a Tale of powerful interest named *The Arab Wife, a Story of the Polynesian Seas*. And in January we will present to our readers the commencement of an original novel by Mrs E. Newman, entitled

THE LAST OF THE HADDONS.

Besides the foregoing Novelles and Novel, *Chambers's Journal* will contain the usual amount of Instruction and Entertainment.

Printed and Published by W. & R. CHAMBERS, 47 Paternoster Row, LONDON, and 339 High Street, EDINBURGH.